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REMARKS

By the foregoing amendments, Applicants have revised independent claim 1 to recite more clearly that the basis for choosing a processor group is whether that group's processors are hosting the applications that the data flows require. The specification provides support for this feature in, for example, the passage extending from page 7's line 23 to page 8's line 2, the passage at page 16's lines 3-7, and the passage at page 45's lines 18-21. Applicants have similarly revised independent claims 18 and 28. Applicants have further amended claim 18 to make it clear that the flow processors recited in the claim are associated with corresponding processor groups. Additionally, Applicants have canceled independent claim 35 and have added new independent claim 38. Applicants have further revised claims 36 and 37 to make them depend on new claim 38 and have amended claim 19 to correct an antecedent problem. And, to address the Examiner's rejection of claim 26 under 35 U.S.C. §112, 2nd paragraph, Applicants have amended claim 26 to replace the wording "data request" with the wording "data flow" recited in independent claim 18. After these amendments, claims 1-34, and 36-38 are pending in the application.

The Examiner has rejected claims 1, 3-17, and 35-37 as defining subject matter anticipated by the system described in U.S. Patent No. 5,522,070 to Sumimoto. Applicants respectfully request that the Examiner reconsider this rejection.

Applicants invented a system that distributes data flows among groups of processors already hosting applications used to service the data flows (page 16's lines 3-7, and pages 41-42 of the specification). Applicants recognized that greater task-assignment efficiency

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can be achieved by implementing a "divide-and-conquer" scheme, whereby task-assignment decisions are based on a two-step procedure. In the first step, a processor group hosting the application(s) required to serve a data flow is first identified. In the second step, a flow scheduler determines the availability of the processors within the identified group. That determination may be based on criteria such as CPU utilization, memory utilization, queue length, etc. The scheduler then directs the data flow to the selected processor. Applicants recognized that such a "divide-and-conquer" scheme promotes more-efficient resource management; the scheduler does not have to keep track of which applications are hosted, or are executing, on the individual processors of Applicants' system. It only has to know what applications are hosted by the designated groups of processors. Applicants further recognized that having a particular processor group host a known and limited set of service-providing applications reduces the latency and overhead associated with retrieving applications since such a limited set of applications could permanently reside on the local memory of the processors within the processor group to which these applications were assigned. Additionally, associating a limited set of applications with a particular processor group makes it possible to have some or all of those applications concurrently run on the processors of the group, thereby further reducing any latency associated with running applications and providing the needed services to the data flows.

True, use of schedulers to assign tasks in multi-processor environments is known in the prior art. For example, Sumimoto discloses a scheduler that bases its allocation of processes to computers on the computers' respective CPU speed, load, etc. But nowhere does Sumimoto disclose or suggest first identifying a group of processors or computers

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hosting a known set of applications required to service a particular process so it can limit its consideration to a schedule associated with the identified group.

Accordingly, Sumimoto does not disclose or suggest the subject matter of Applicants' claim 1 or 38. These claims and the claims that depend on them are therefore patentable over Sumimoto.

The Examiner has also rejected independent claims 18 and 28 and the claims that depend on them as having been rendered obvious by Sumimoto in view of U.S. Patent 6,006,264 to Colby et al. Applicants respectfully request that the Examiner reconsider this rejection.

Colby describes a content-aware flow switch that intercepts a client content request and transparently directs the content request to a best-fit server (abstract). Like Sumimoto, and unlike the subject matter of Applicants' independent claims 18 and 28, Colby does not disclose or suggest first identifying a group of processors hosting a known set of applications required to service a particular data flow (or any other type of request) before using a schedule associated with the identified processor or computer group to direct the data flow to one of the processors associated with the group. Rather, a web flow redirector of the content aware switch determines, using a content server database (CSD), whether a request for content can be served by a local server connected to the switch (col. 8's lines 34-55). If it can, and if more than one local server can serve the content request, the CSD selects a best-fit server based on several criteria, including the content type information of the request, the desired quality of service, etc. (col. 2's lines 48-58). Since Colby searches for servers having particular content and not for processors capable of processing data flows

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using applications hosted by such processors, Colby does not identify processor groups hosting applications that can be used to process a data flow and thus restrict its allocation to processors belonging to these groups. As explained above, Sumimoto also does not disclose the features recited in Applicants' independent claims 18 and 28.

So neither Sumimoto nor Colby disclose or suggest the subject matter of Applicants' claims 18 and 28. These claims and the claims that depend on them are therefore patentable over the prior art cited by the Examiner.

Accordingly, Applicants ask that the Examiner reconsider and allow claims 1-34, and 36-38.

Respectfully submitted,



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